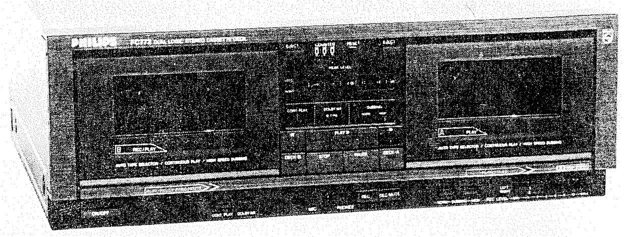
Cassette deck 70FC772/00R/05R

Service
Service
Service



Voor reparatieaanwijzingen van het cassettemechanisme zie Service Manual: "Recorders tape deck CMAB6Z021A, CMAB6Z022A".

Service Manual

Inhoudsopgave **Pagina**

Inhoudsopgave	Pagina
Specificatie	2
Aansluitingen en instelorganen	3
Elektrische metingen en instellingen	4, 5, 6
Uitkastvoorschrift	7
Principeschema's	8, 9, 10, 14, 15, 16
Bedradingsschema's	11, 12, 13, 17, 18
Halfgeleider lay-out	19
Standaard symbolenlijst	20
Stuklijst mechanische onderdelen	20
Kasttekening	21, 22
Stuklijst elektrische onderdelen	23

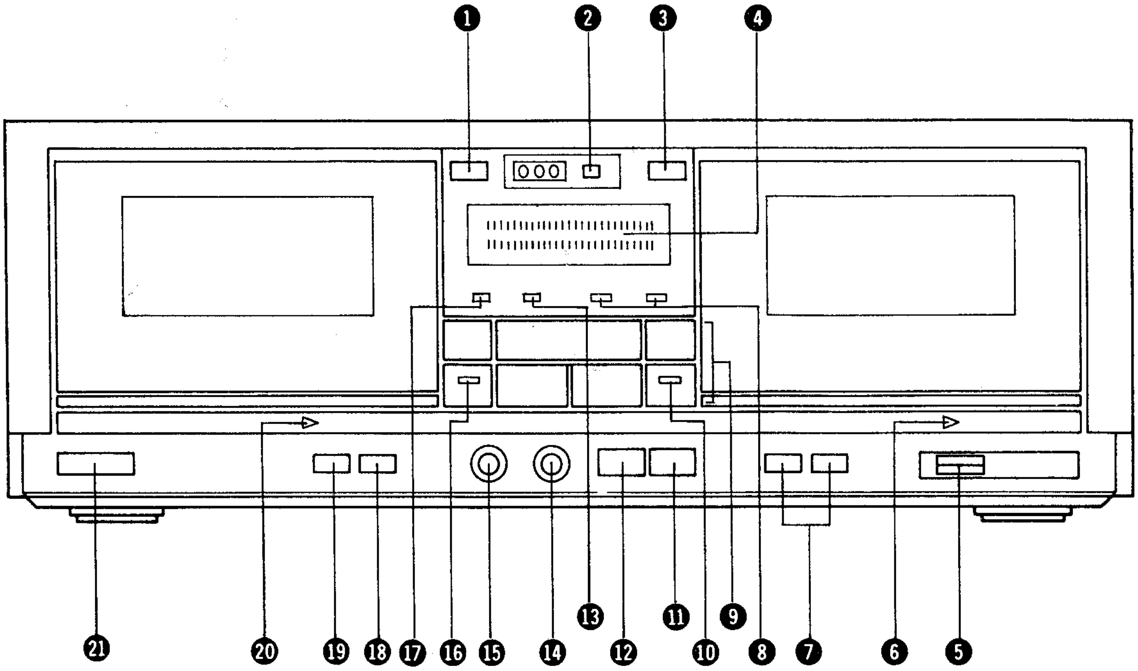
Veligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

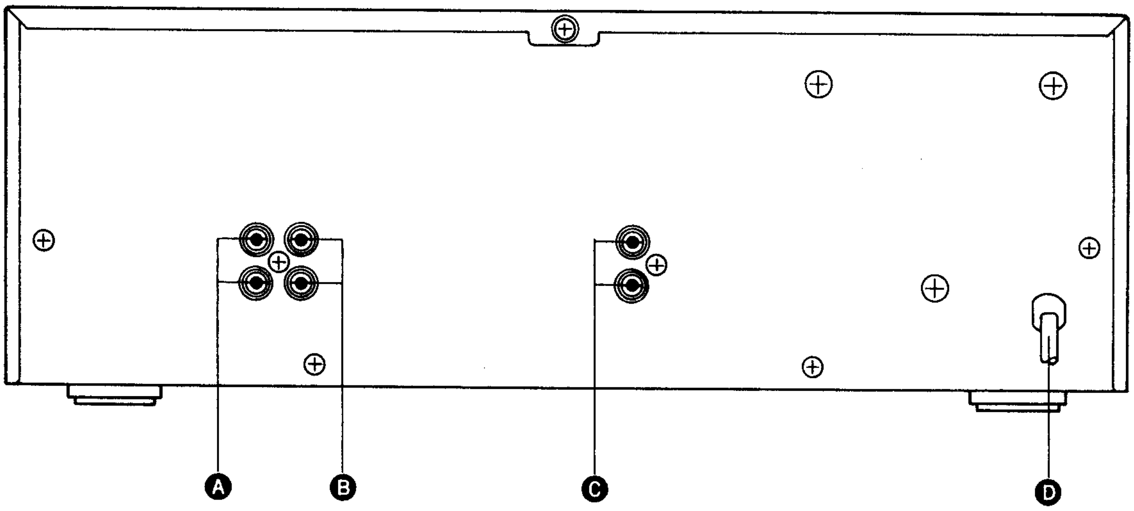
Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviço

PHILIPS

Published by Service Consumer Electronics

SPECIFIKATIE	Nominale waarde	Typische waarde	
Algemeen			
Netspanning /00R	: 220 V~	: 220 V~	
/05R	: 240 V~	: 240 V~	
Netfrekwentie	: 50-60 Hz	: 50-60 Hz	
Opgenomen vermogen	: 20 W max.	: 20 W max.	
Afmetingen (BxHxD)	: 360 x 120 x 300 mm	: 360 x 120 x 300 mm	
Gewicht	: 4.8 kg	: 4.8 kg	
Cassette recorder			
Tape systeem	: compact cassette	: compact cassette	
Aantal sporen	: 2 x 2 (stereo)	: 2 x 2 (stereo)	
Bandsnelheid	: 4.76 cm/sec.	: 4.76 cm/sec.	
Snelheidsafwijking	: ± 3% (DIN)	: ± 1.5%	
Wow en flutter (gewogen)	: ≤0.28% (DIN)	: ≤0.15% (DIN), 0.05% (WRMS)	
Spoeltijd (C60)	: ≤110 sec.	: ≤110 sec.	
Bias- en wisfrekwentie	: 87 KHz ± 5%	: 87 KHz ± 5%	
Frekwentiebereik	: DIN 45500:	: IEC:	: NAB:
Metal	: 40 - 15.000 Hz	: 30 - 17.000 Hz	: 30-18.000 Hz
Chromium	: 40 - 15.000 Hz	: 30 - 17.000 Hz	: 30-18.000 Hz
Normal	: 40 - 14.000 Hz	: 30 - 16.000 Hz	: 30-17.000 Hz
Signaal/ruis (zonder dolby)	: DIN 45500:	: IEC/DIN	: NAB
Metal	: ≥48 dB	: 58 dB	: 60 dB
Chromium	: ≥48 dB	: 58 dB	: 60 dB
Normal	: ≥47 dB	: 57 dB	: 58 dB
Verbetering met dolby B	: ≥8.5 dB (CCIR)	: 10 dB (bij 5 KHz)	
Vervorming (K3)	: ≤3%	: ≤2%	
Ingangsgevoeligheid			
Microfoon	: 0.85 mV bij 2 kΩ	: 0.56 mV bij 2 kΩ	
Lijningang cinch	: 100 mV bij 40 kΩ	: 70 mV bij 40 kΩ	
Uitgangen			
Lijnuitgang	: ≥0.35 V/Z_0 <3 kΩ	: 0.5 V/Z_0 2.2 kΩ	
Hoofdtelefoon	: 50 mV bij 8 Ω	: 50 mV bij 8 Ω	
Hoofdtelefoon impedantie	: 8 - 600 Ω	: 8 - 600 Ω	





Aansluitingen en instelorganen

1	Eject toets (Deck B)	
2	Nulsteltoets	
3	Eject toets (Deck A)	
4	Niveau-indicatoren	DX51~DX60
5	Opneemsterkte regelaars	RV01
6	Bandloop indicator (Deck A)	DY44
7	Kopieertoetsen	SS51,SS52
8	Normal/High dubbing indicatoren	DY51,DY52
9	Bedieningstoetsen	SS23,SS25~SS27, SS41, SS55, SS56
10	Deck A indicator.	DY55
11	Stille opname toets	SS24
12	Opneemtoets "REC".	SS21
13	Dolby NR. indicator	DY54
14	Aansluitbus "PHONES"	JG01
15	Aansluitbus "MIC".	JE01
16	Deck B indicator	DY56
17	Continuous play indicator	DY53
18	Dolby NR. schakelaar	SS04
19	Continuous play toets.	SS53
20	Bandloop indicator (Deck B)	DY50
21	Schakelaar aan/uit	S851

A	Lijnuitgang	JW01
B	Lijningang	JW01
C	In- en uitgang voor afstandsbediening	JR01
D	Netsnoer	WO01

ELEKTRISCHE METINGEN EN INSTELLINGEN

Algemene voorwaarden

Voor de elektrische metingen en instellingen gelden de volgende algemene voorwaarden, tenzij anders is aangegeven:

- Netspanning 220 V ± 5%, 50 Hz.
- Omgevingstemperatuur 20 tot 25°C.
- Dolby schakelaar SS04 uit.
- Opneemsterkteregelaar "rec level" RV01 op maximum.
- Bij de metingen en instellingen is uitgegaan van metingen aan het linkerkanaal. De aansluitpunten en afregelorganen voor het rechterkanaal zijn tussen haakjes vermeld.
- De spanningen zijn t.o.v. massa gemeten.
- De instellingen en metingen moeten zowel voor tape deck A als voor tape deck B uitgevoerd worden.

Benodigde meetinstrumenten en testcassettes:

- LF generator.
- AC millivoltmeter.
- Multimeter.
- Frekwentieteller.
- Universal testcassette SBC 419 - 4822 397 30069.
- Universal testcassette SBC 420 - 4822 397 30071.

Adjustment	Cassette	Recorder in position	Apply signal to	Measure on	Read on	Adjust with	Value
Tape speed Normal speed *b	SBC419 3150 Hz	Play (deck A or B)	–	JW01 (line out)	Freq. counter	Motor PCB VR1 (deck A) VR1 (deck B) *fig. 3	3150 Hz ± 10 Hz
		Interconnect JM01 (deck A) JM11 (deck B) PCB PU03 under the playing mode.					
High speed *b	SBC419 3150 Hz	Play (deck A or B)	–	PCB PJ03 JW01 (line out)	Freq. counter	Motor PCB VR2 (deck A) VR2 (deck B) *fig. 3	6310 Hz ± 10 Hz
		Remove the interconnections					
Head azimuth	SBC419 10 kHz	Play (deck A or B)	–	JW01 (line out)	mV-meter	Head azimuth adjust screw *C	Max. output
Playback sensitivity + indicators	SBC419 315 Hz-0 dB	Play (deck A or B)	-	PCB P603 TP1 (TP2) TP3 (GND)	mV-meter	PCB PU03 deck A RJ47 (RJ48) deck A PCB P603 deck B RJ09 (RJ10) deck B	270 mV
				-	VX 01	PCB PU03 RX 13 (RX 14)	+1 dB
Playback frequency response	SBC419 40 Hz; 250 Hz; 6.3 kHz; 12.5 kHz	Play (deck A or B)	–	JW01 (line out)	mV-meter	–	See graph. Fig. 1 frequency response
Target value bias	SBC420 side 2 *e SBC419 side 2 *f Metal cassette	Rec + Play (via pause) (deck B)	–	PCB P603 deck B JJ01 point 2 (4) TP3 (GND)	mV-meter	RL01 (RL02) deck B	13V (AC) *d
						RL05 deck B	24V (AC)
						RL06 deck B	30V (AC)
Recording sensitivity	SBC419 side 2 *f	Rec + Play (via pause) (deck B)	315 Hz to JW01 (line in)	TP1 (TP2) TP3 (GND)	mV-meter	LF-generator	170 mV
				Disable the bias by interconnecting pin 18, 19 and 20 of PCB P603 QL01 deck B			
				JJ01 point 2 (4) deck B TP3 (GND)	mV-meter	RK01 (RK02) deck B	30 mV = target value
				Remove the interconnection. Make a recording and play it back.			
		Play (deck B)	–	TP1 (TP2) TP3 (GND)	mV-meter	–	170 mV *g

Adjustment	Cassette	Recorder in position	Apply signal to	Measure on	Read on	Adjust with	Value
BIAS ferro	SBC420 side 2 *e	Rec + Play (via pause) (deck B)	–	PCB PJ03 (deck B) JJ01 point 2 (4) TP3 (GND)	mV-meter	RL01 (RL02) (deck B)	13V = target value
			315 Hz to JW01 (line in)	TP1 (TP2) TP3 (GND)	mV-meter	LF-generator	13.5 mV
			6.3 kHz–10 kHz 12 kHz–14 kHz 15 kHz–16 kHz to JW01 (line in)	Record a number of frequencies with the same input voltage and play them back			
		Play (deck B)	–	TP1 (TP2) TP3 (GND)	mV-meter	–	See graph. Fig. 2 if necessary repeat *d BIAS adjustment *h
BIAS chromium	SBC419 side 2 *f	Adjustment is identical to BIAS ferro, but the target value is24 V; adjust with; RL05 (deck B)					
BIAS metal	Metal cassette	Adjustment is identical to BIAS ferro, but the target value is30 V; adjust with; RL06 (deck B)					
f-osc.	Arbitrary cassette	Rec (deck B)	–	PCB P603 deck B JJ01 point 2 TP3 (GND)	Freq. counter	LL01 (deck B)	87 kHz

Opmerkingen:

*a. Voor alle metingen en instellingen met lopende band dienen de koppen en bandgeleiders gedemagnetiseerd en gereinigd te worden.

*b. Het is belangrijk dat eerst de hoge snelheid wordt ingesteld en daarna de normale snelheid. Het verschil in snelheid tussen deck A en B mag zowel voor de normale snelheid als voor de hoge snelheid ten hoogste 1% zijn.

*c. - Verwijder de sierklep en sierstrip (zie fig. 5) en stel als volgt de kopazimuth in:
- Bandlooprichting naar rechts (FWD-play) linkerschroef.
  Bandlooprichting naar links (REV-play) rechterschroef.
- Wanneer het uitgangsniveau tussen het rechter- en linkerkanaal verschilt, dan moet men het kanaal met de laagste waarde op maximum instellen.
- Voor A-deck en B-deck dezelfde band en bandgedeelte gebruiken.
- Na het instellen de azimuth instelschroeven van een borglak voorzien.

*d. - **Ferro-cassette:**
  Plaats trimpotentiometers RL05 en RL06 (B-deck) in de middenstand.
  Regel met de trimpotentiometers RL01 (RL02) B-deck de BIAS optimaal af.
  Waarden links en rechts noteren.
- **Chromium-cassette:**
  Regel met trimpotentiometers RL05 (B-deck) de BIAS optimaal af.
  Waarde links noteren.
- **Metal-cassette:**
  Regel met trimpotentiometers RL06 (B-deck) de BIAS optimaal af.
  Waarde links noteren.
  Regel met de trimpotentiometers de genoteerde BIAS-waarden voor de bandsoorten opnieuw af en herhaal dit totdat de juiste waarden gevonden zijn.

*e. Bij minder hoge nauwkeurigheid kan ook een ferro-cassette van goede kwaliteit gebruikt worden.

*f. Bij minder hoge nauwkeurigheid kan ook een chromium-cassette van goede kwaliteit gebruikt worden.

*g. Indien de uitgangsspanning op TP1 (TP2) geen 170 mV ± 0.25 dB is, regel dan met RK01 (RK02) B-deck het LF-signaal (voormagnetisatie uitgeschakeld) zoveel dB lager of hoger als de meteruitslag te hoog of te laag is.

*h. Bij het instellen van het ene kanaal kan het andere iets worden beïnvloed.
Bij een goede instelling zal de frekwentiekarakteristiek als in fig. 4 curve b verlopen, vervorming ≤3%.

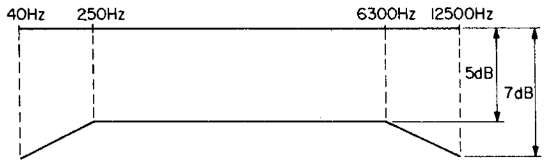


Fig. 1

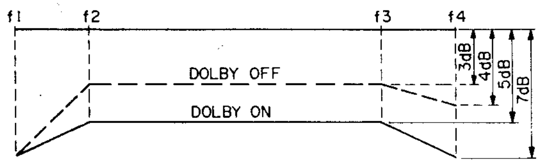


Fig. 2

	f1	f2	f3	f4
Metal	40 Hz	125 Hz	8 kHz	16 kHz
Cr	40 Hz	125 Hz	8 kHz	16 kHz
Normal	40 Hz	125 Hz	8 kHz	14 kHz

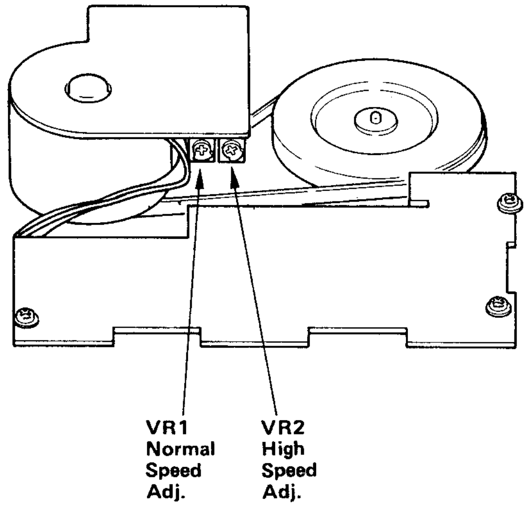


Fig. 3

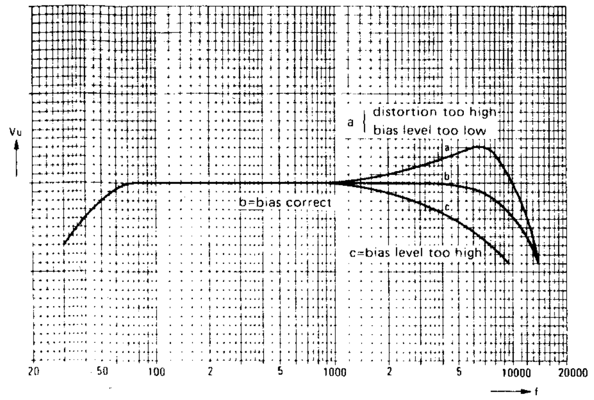


Fig. 4

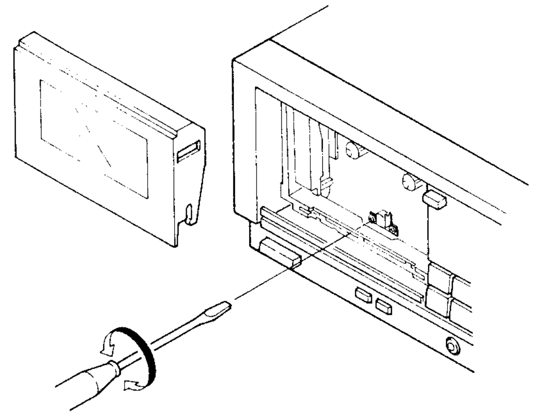
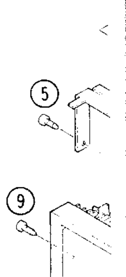


Fig. 5

UITKASTVO(

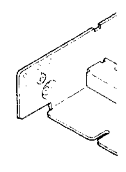
1. Het verwij

Verwijder 5 sc



2. Het verwij

Verwijder 2 sc



Value
13V = target value
13.5 mV
See graph. Fig. 2 if necessary repeat *d BIAS adjustment *h
87 kHz

)6 (B-deck) de

de genoteerde
en opnieuw af en
ɜn gevonden zijn.

ı ook een
ebruikt worden.

ı ook een
teit gebruikt

(TP2) geen
t RK01 (RK02)
satie
ɔger als dé

ĸan het andere

ᐟentiekarakteristiek
ming ≤3%.

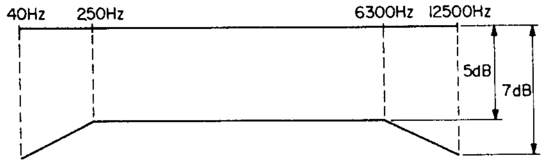


Fig. 1

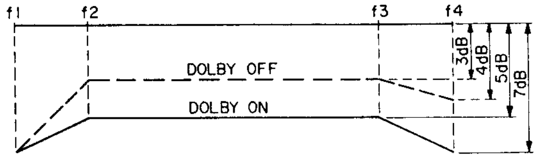


Fig. 2

	f1	f2	f3	f4
Metal	40 Hz	125 Hz	8 kHz	16 kHz
Cr	40 Hz	125 Hz	8 kHz	16 kHz
Normal	40 Hz	125 Hz	8 kHz	14 kHz

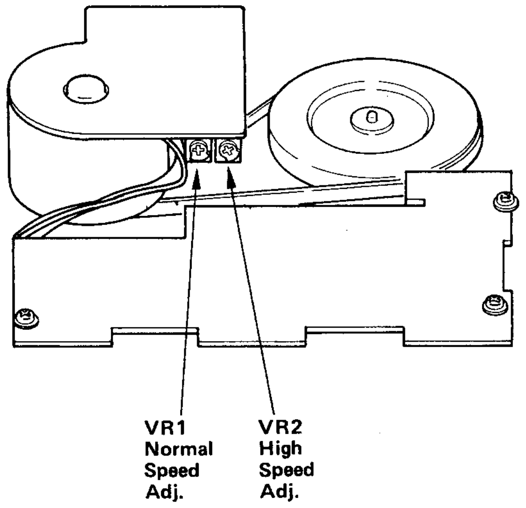


Fig. 3

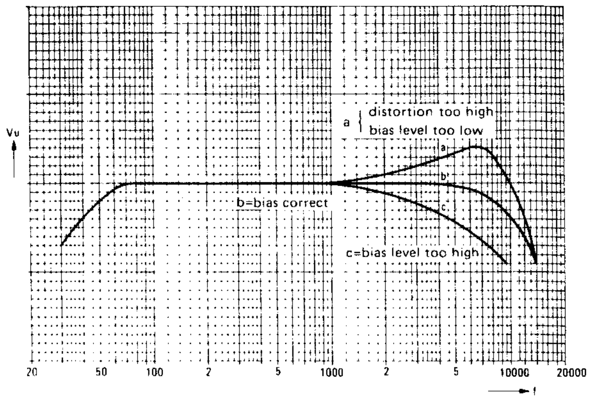


Fig. 4

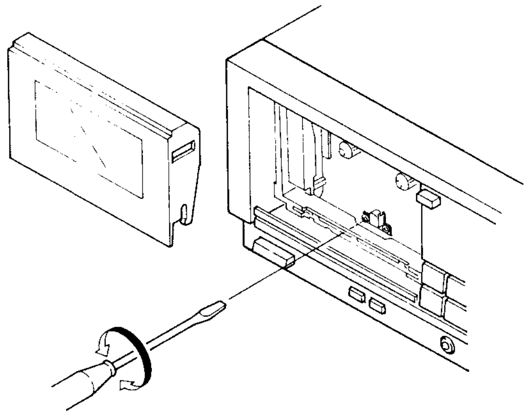
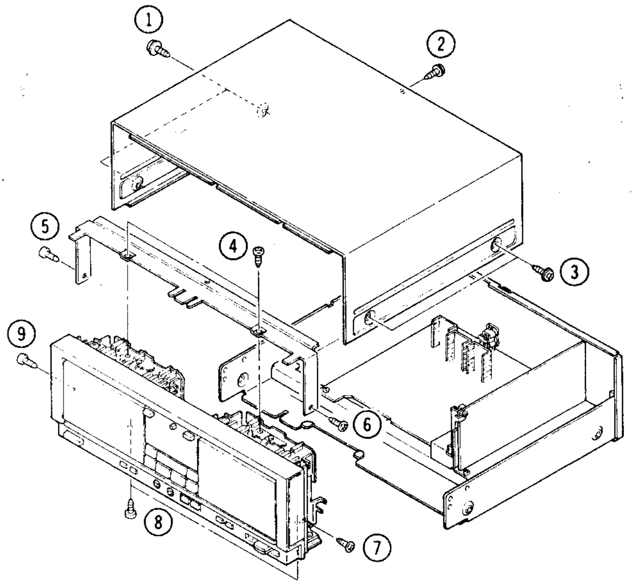


Fig. 5

UITKASTVOORSCHRIFT

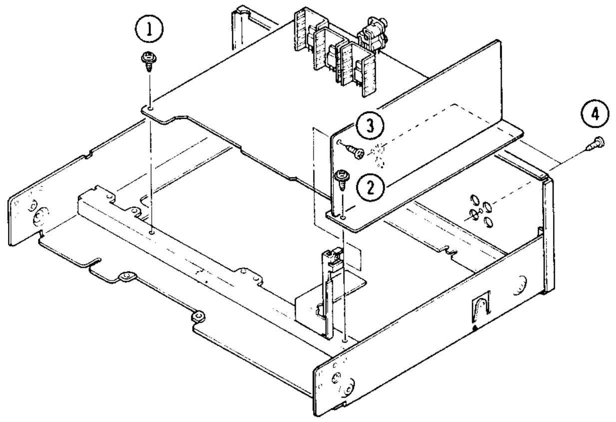
1. Het verwijderen van de bovenkap en het frontpaneel.

Verwijder 5 schroeven ① - ③ en 8 schroeven ④ - ⑨.



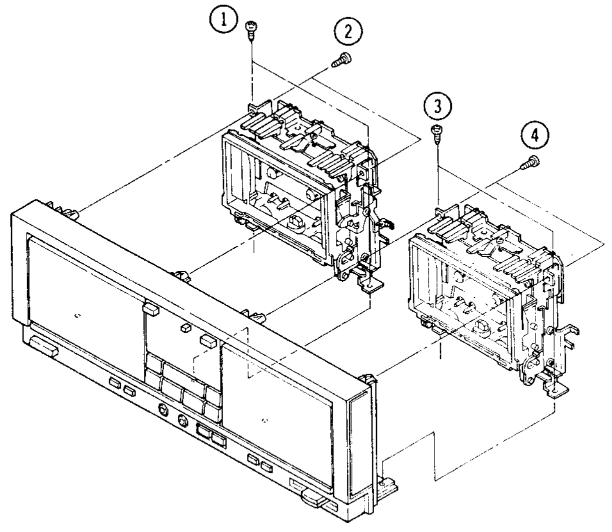
2. Het verwijderen van de hoofdprint.

Verwijder 2 schroeven ① - ② en 3 schroeven ③ - ④.



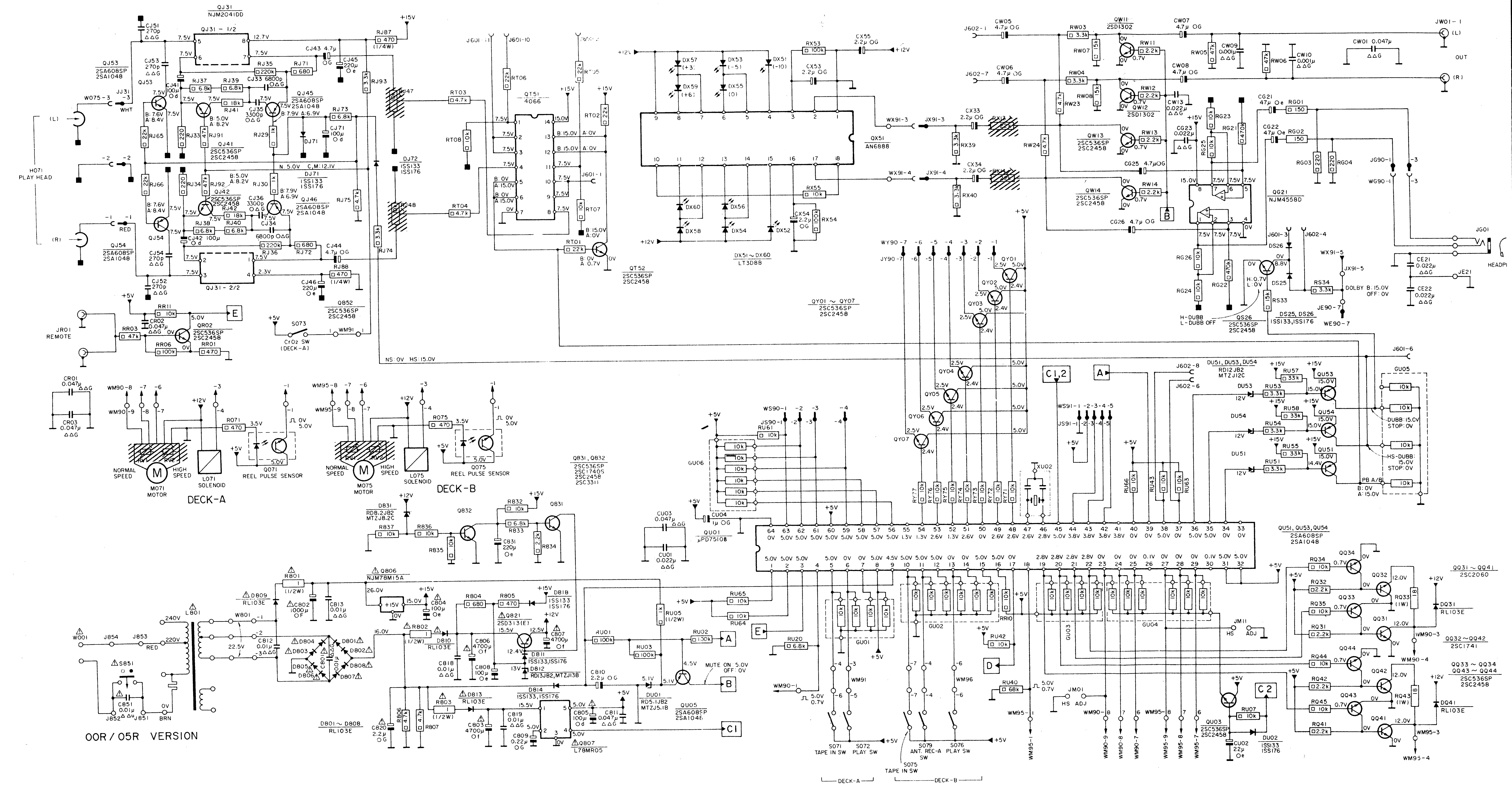
3. Het uitkasten van de loopwerken.

Verwijder 8 schroeven ① - ④.



SCHEMATIC DIAGRAM

R	RJ65 RJ66 RJ91 RJ92 RJ33 RJ34 RJ37 ~ RJ42 RJ35 RJ36 RJ71 ~ RJ75 RJ88 RJ93 RJ87 RJ47 RJ48 RT01 ~ RT07 RX53 ~ RX55 RX39 RX40 RX13 RX14 RW24 RW23 RW03 RW04 RW07 RW08 RW11 ~ RW14 RW05 RG21 ~ RG26 RW06 RG01 ~ RG04 RS33 RS34
	RR03 RR11 RR06 RR01 R801 R071 RJ29 RJ30 R802 R806 R807 R803 ~ R805 R075 RT08 R832 ~ R837 RU01 RU03 RU05 RU02 RU65 RU64 RU61 RU20 RY71 ~ RY78 RU42 RU40 RR10 RU66 RU43 RU63 RU07 RU51 RU53 ~ RU55 RU57 RU58 RQ31 ~ RQ35 RQ41 ~ RQ45
C	CR01 ~ CR03 CJ51 ~ CJ54 CJ41 CJ42 CJ33 ~ CJ36 CJ43 ~ CJ46 CJ71 C831 CX53 ~ CX55 CW05 CW06 CG26 CG25 CW07 CW08 CW13 CG21 ~ CG23 CW09 CW10 CE21 CE22 CW01
	C851 C812 C802 C801 C813 C820 C804 C818 C803 C806 ~ C809 C819 C807 C805 C810 C811 CU01 CU03 CU04 CX33 CX34 CU02 QU03 DU02 QU53
Q - D	QJ53 QJ54 QR02 QJ41 QJ42 QJ31-1 QJ31-2 D801 ~ D809 QJ45 QJ46 DJ71 Q806 Q821 D818 D810 ~ D814 Q807 QT51 DU01 QB51 ~ QB53 QU05 QT52 QB04 QB03 DX51 ~ DX60 QU01 QX51 QB06 QY01 ~ QY07 QW11 ~ QW14 DU51 ~ DU54 QG21 QS26 DS25 DS26 QU51 QU54 QQ31 ~ QQ34 QQ41 ~ QQ44 DQ31 DQ41
L - S - X - G	S851 L801 L071 Q071 DJ72 L075 Q075 D831 Q831 Q832 GU06 GU01 GU02 XU02 GU03 GU04 GU05



NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

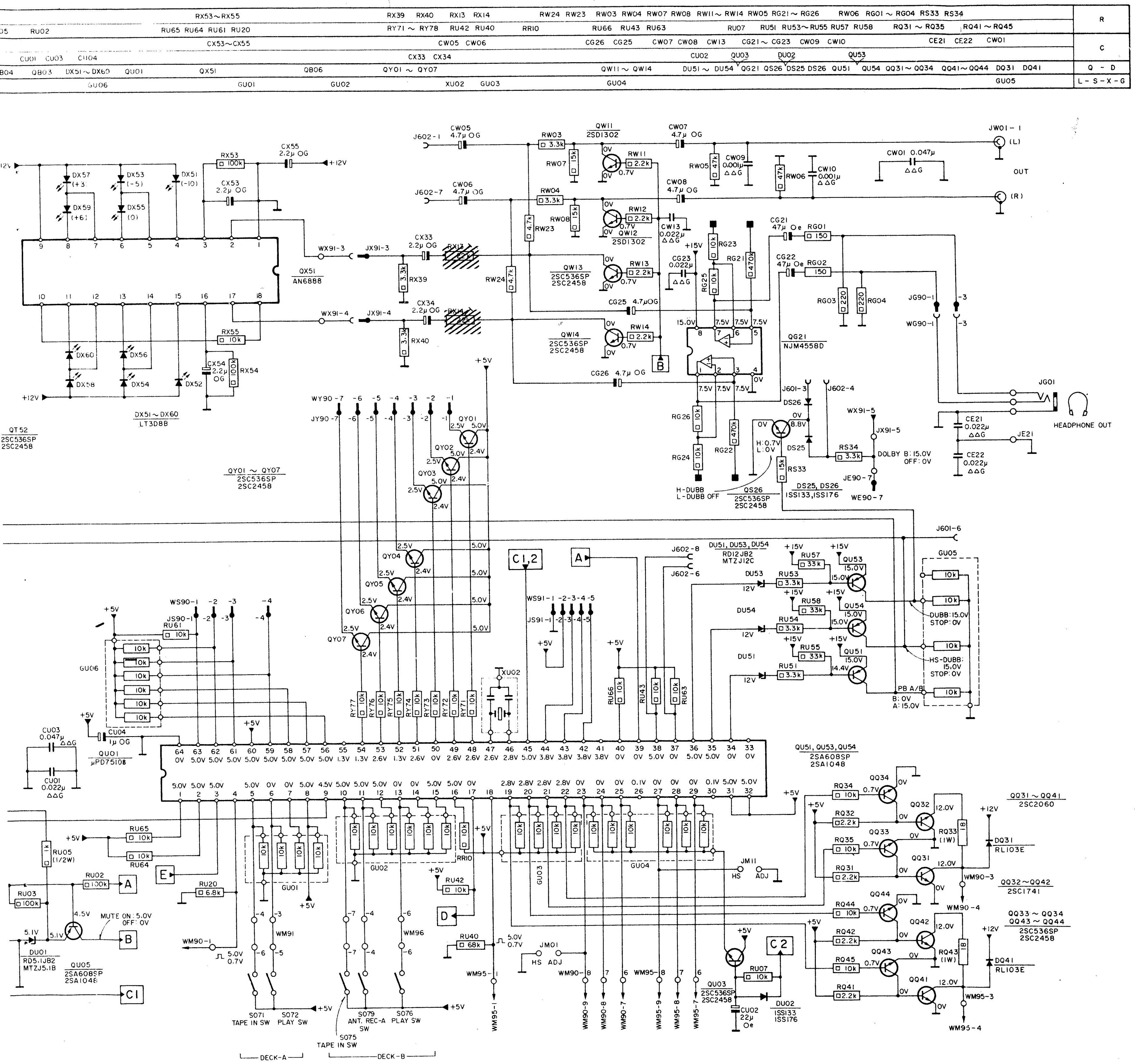
Note 1. Unless otherwise specified, the voltages are measured with reference to the chassis, with a normal tape inserted, in the stop mode.
MODE: Cassette Select/B, FWD,
Dolby NR/OFF

2. A : DECK A, B : DECK B, HS: HIGH SPEED, NS: NORMAL SPEED
N: NORMAL TAPE, C: CrO_2 TAPE, M: METAL TAPE

⊥ ;CHASSIS GROUND LINE (0V)
▮ ; AUDIO GROUND LINE (+7.5V DC)

THE DC VOLTAGE OF EACH PORTION IS TO BE MEASURED ON THE BASIS OF THE CHASSIS GROUN

SCHEMATIC DIAGRAM



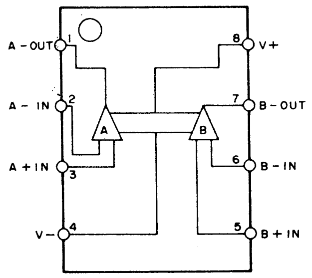
ıoltages are
ıssis, with a
ıde.

2. A : DECK A, B : DECK B, HS: HIGH SPEED, NS: NORMAL SPEED
N: NORMAL TAPE, C: CrO_2 TAPE, M: METAL TAPE

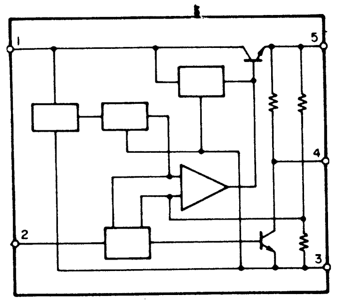
⊥ ;CHASSIS GROUND LINE (0V)
▟ ; AUDIO GROUND LINE (+7.5V DC)

THE DC VOLTAGE OF EACH PORTION IS TO BE MEASURED ON THE BASIS OF THE CHASSIS GROUND.

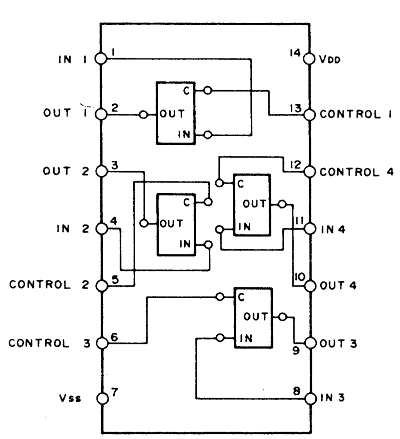
NJM2041D-D



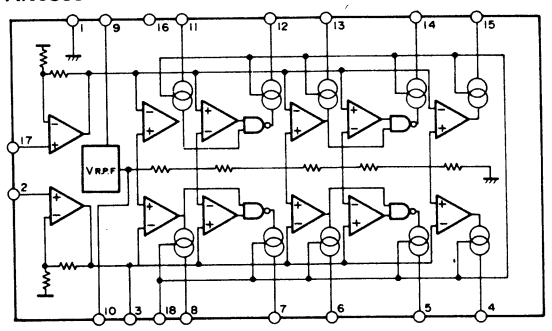
L78MR05



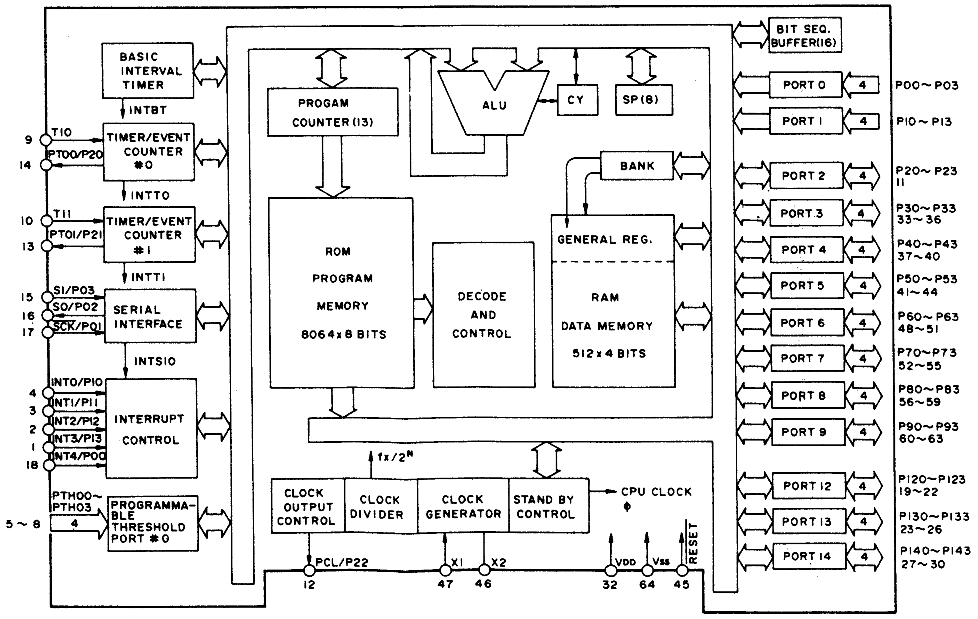
LC4066HB



AN6888

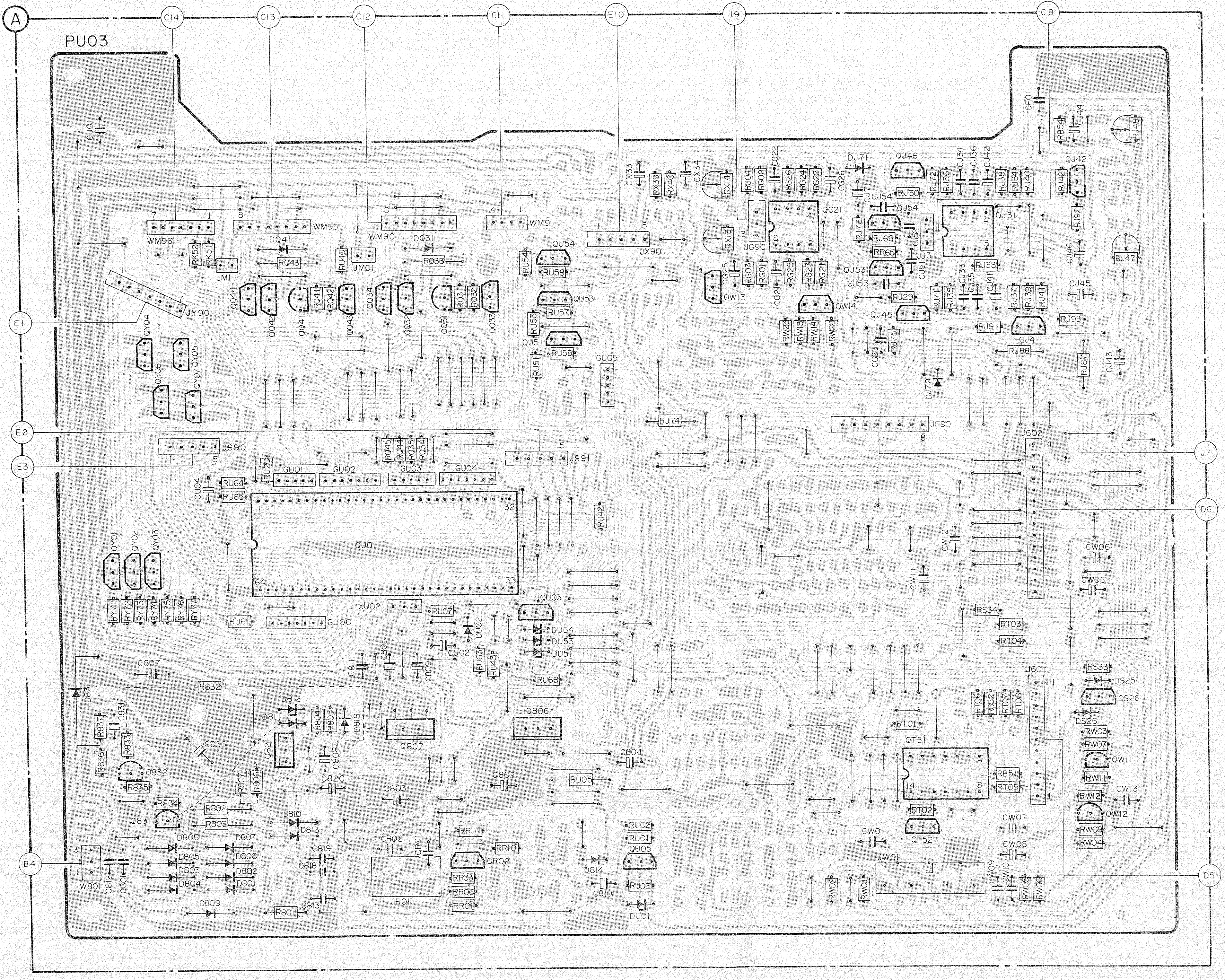


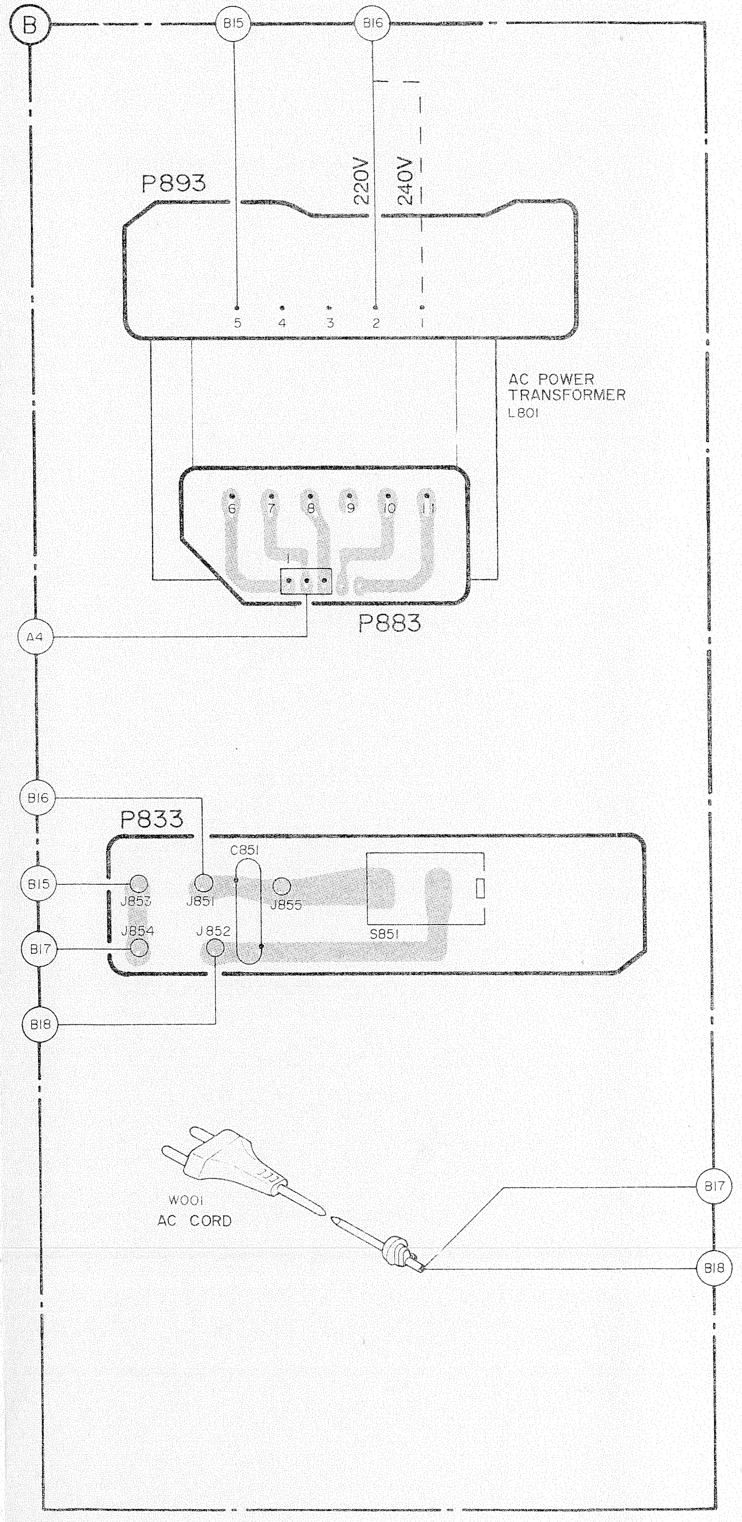
µPD75108CW



WIRING DIAGRAM

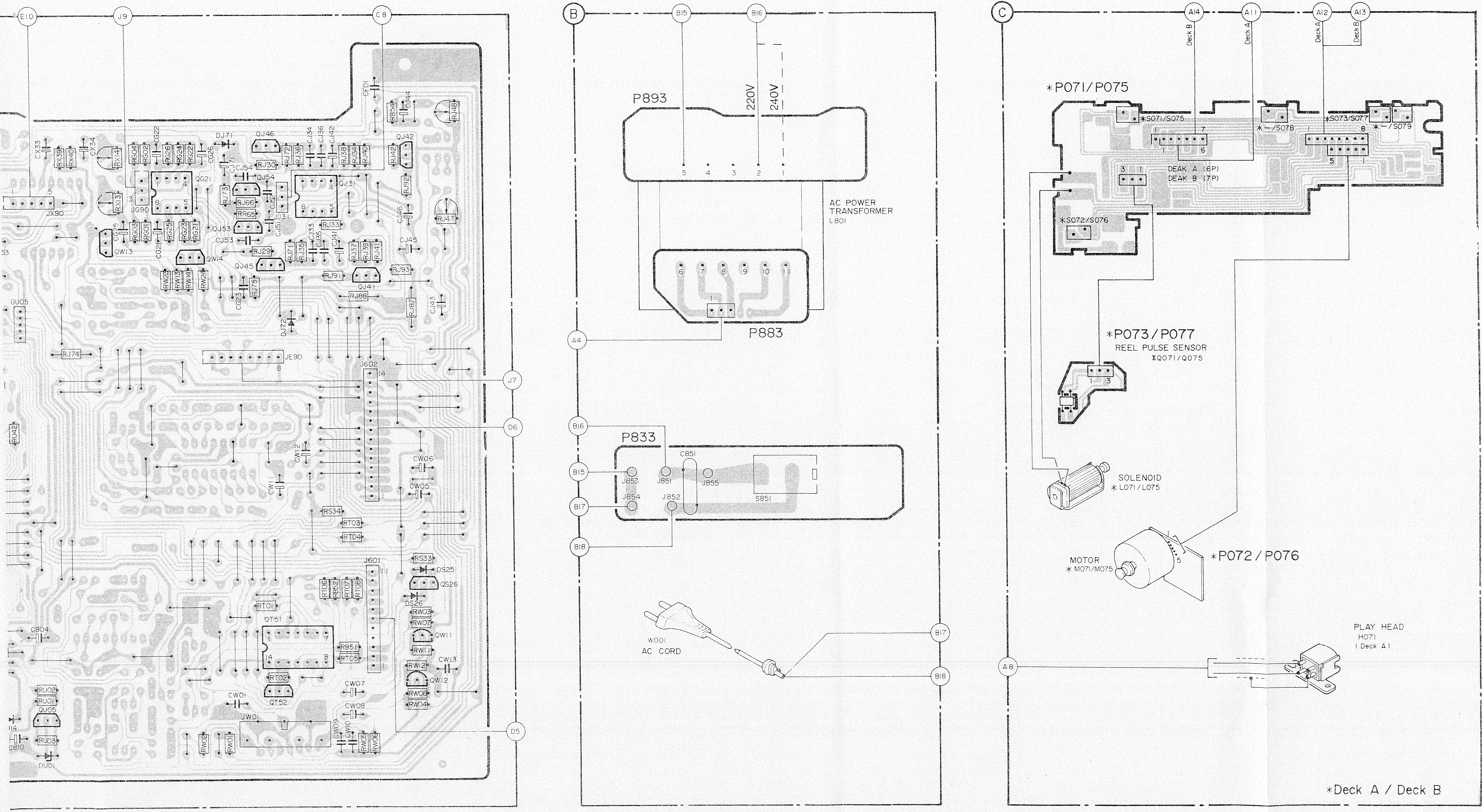
R – G	RY71～RY78 RU64 RU65 GU01～GU06 RU07 RU63 RU43 RU51 RU66 RU58 RX39～RX40 RX13 RX14 RG01～RG04 RG21～RG26 RW23 RW13 RW14 RW24 RJ66 RJ65 RJ29 RJ33～RJ42 RJ88 RJ87
	R807 R801～R806 RU61 RU20 RQ41～RQ43 RQ45 RQ44 RQ31～RQ35 RU53～RU55 RU42 RJ74 RW02 RW01 RJ71～RJ73 RJ75 RJ91 RJ93 RB54 RS33
	R832～R837 RK52 RK51 RR01 RR03 RR06 RR10 RR11 RU51 RU05 RU57 RU01～RU03 RJ30 RT01～RT08 RS34 RB52 RB51 RW03～RW08 RW12 RW11 RJ47 RJ48
C	CU01 C803 CX33 CX34 CG25 CG23 CJ33～CJ36 CF01 C851
	C831 C807 C806 C813 C818～C820 C805 C809 CU02 C802 C804 CG22 CG21 CG26 CJ71 CJ51～CJ54 CJ42 CJ41 CJ43～CJ46
	C812 C801 CU04 C808 C811 CR02 CR01 C810 CW01 CW07～CW12 CW05 CW06 CW13
Q – S	QY01～QY07 Q831 Q832 QQ41～QQ44 Q821 QU01 QQ31～QQ34 Q807 QR02 Q806 QU03 QU51～QU54 QU05 QW13 QG21 QW14 QJ53 QJ54 QJ46 QJ45 QT51 QT52 QJ31 QJ41 QJ42 QS26 QW11 QW12 S851
D – L – X	D831 D801～D813 DQ41 D818 XU02 DQ31 DU02 DU51 DU53 DU54 D814 DU01 DJ71 DJ72 DS26 DS25 L801





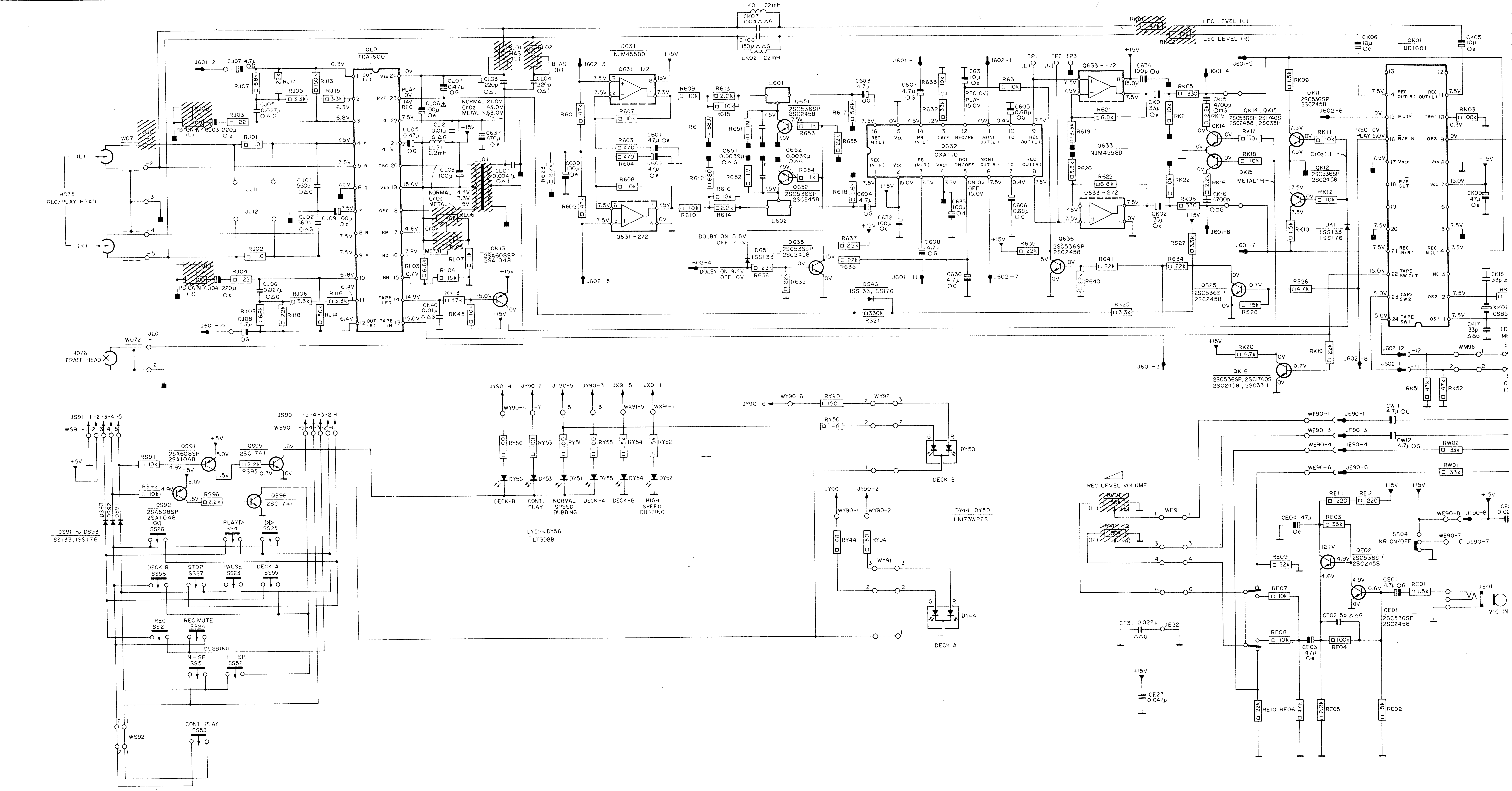
WIRING DIAGRAM

58 RX39~RX40 RX13 RX14 RG01~RG04 RG21~RG26 RW23 RW13 RW14 RW24 RJ66 RJ65 RJ29 RJ33~RJ42 RJ88 RJ87
42 RJ74 RW02 RW01 RJ71~RJ73 RJ75 RJ91 RJ93 RB54 RS33
J57 RU01~RU03 RJ30 RT01~RT08 RS34 RB52 RB51 RW03~RW08 RW12 RW11 RJ47 RJ48
CX33 CX34 CG25 CG23 CJ33~CJ36 CF01 C851
C804 CG22 CG21 CG26 CJ71 CJ51~CJ54 CJ42 CJ41 CJ43~CJ46
C810 CW01 CW07~CW12 CW05 CW06 CW13
QU54 QU05 QW13 QG21 QW14 QJ53 QJ54 QJ46 QJ45 QT51 QT52 QJ31 QJ41 QJ42 QS26 QW11 QW12 S851 S072 S076 Q071 Q075 S071 S075 S078 S073 S077 S079
4 DU01 DJ71 DJ72 DS26 DS25 L801 L071 L075



SCHEMATIC DIAGRAM

R	RJ07 ~ RJ10 RJ01 ~ RJ06 RJ13 ~ RJ18 RL03 ~ RL07 RK13 RK45 R623 R601 ~ R604 R607 ~ R610 R611 ~ R616 R651 ~ R655 R636 ~ R639 R617 R618 RS21 R631 ~ R633 R635 R619 ~ R622 R640 R641 RS25 R634 RS27 RK01 RK02 RK21 RK22 RK05 RK06 RK09 ~ RK12 RS28 RS26 RK03 RK
	RS91 RS92 RS96 RS95 RL03 RL01 RL02 RY51~RY56 RY44 RY50 RY90 RY94 RV01 RK21 RK22 RK05 RK06 RK17 RK18 RK20 RE03 ~ RE12 RK19 RE02 RE01 RK51 RK52 RW01 RW02
C	CJ03 ~ CJ08 CJ01 CJ02 CJ09 CK40 CL05 ~ CL08 CL21 C637 CL03 CL04 C609 C601 C602 C651 CK07 CK08 C652 C603 C604 C631 ~ C633 C635 C636 C605 ~ C608 CK01 CK02 CK15 CK16 CK06 CW11 CW12 CK05 CK09 C
	CX53 CX54 CX55 CE31 CE23 CE04 CE03 CE02 CE01 CK17 C
Q - D - V	DS91 ~ DS93 QS92 QS91 QS96 QS95 QL01 QK13 DY51 ~ DX56 Q631 - 1 Q631 - 2 DX51 ~ DX60 QX51 D651 Q651 Q652 Q635 DS46 DY44 DY50 Q636 Q633 - 1 Q633 - 2 QK14 QK15 QK16 QS25 QK11 QK12 DK11 QE02 QE01 QK01
S - X - L	SS21 SS56 SS23 ~ SS27 SS41 SS51 ~ SS53 SS55 LL21 LL01 LK01 LK02 L601 L602 SS04 S077 S078 XK01



Note 1. Unless otherwise specified, the voltages are measured with reference to the chassis, with a normal tape inserted, in the stop mode.
MODE: Cassette Select/B, FWD,
Dolby NR/OFF

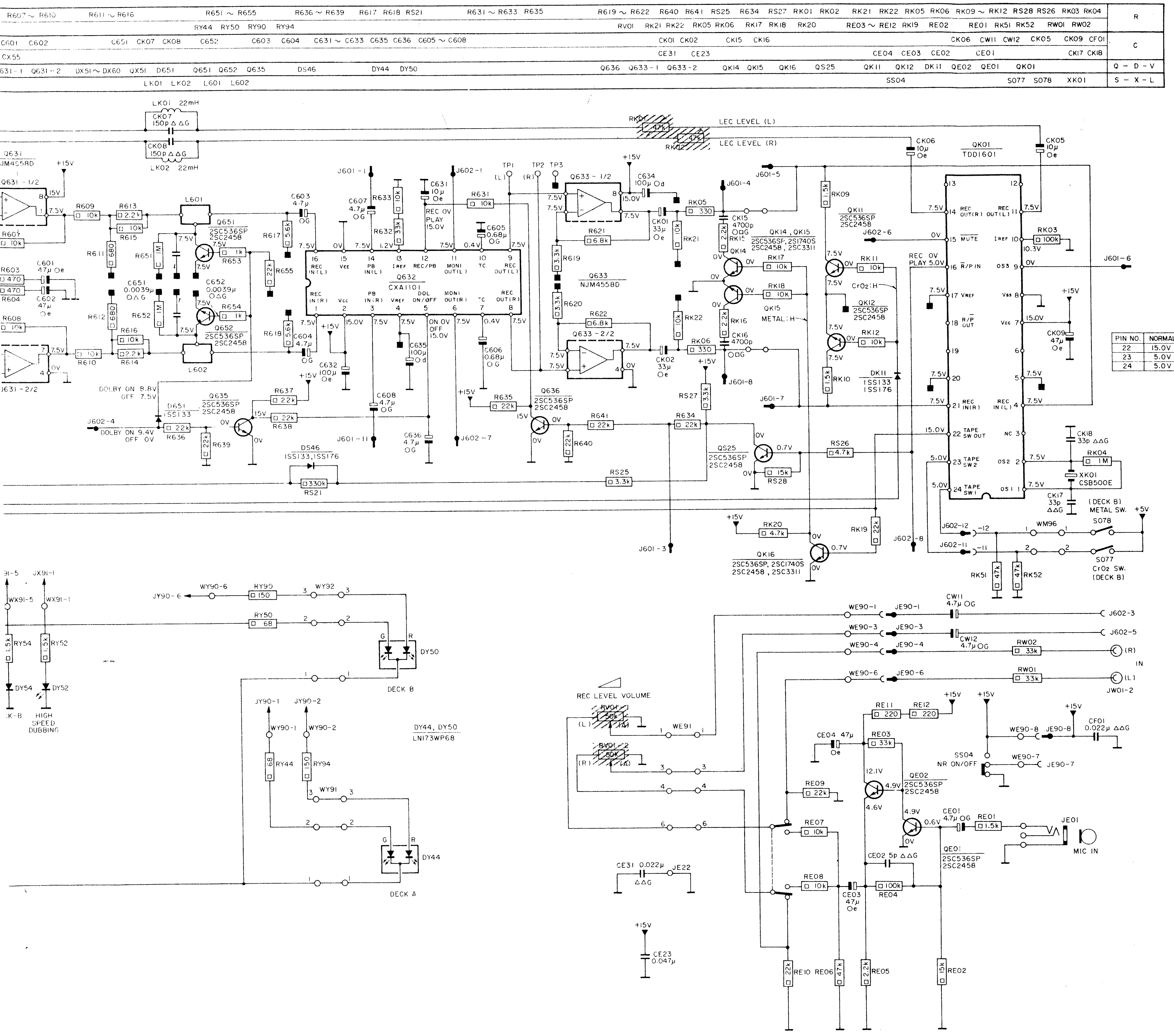
2. A : DECK A, B : DECK B, HS: HIGH SPEED, NS: NORMAL SPEED
N: NORMAL TAPE, C: CrO_2 TAPE, M: METAL TAPE

⊥ ;CHASSIS GROUND LINE (0V)
▮ ; AUDIO GROUND LINE (+7.5V DC)

THE DC VOLTAGE OF EACH PORTION IS TO BE MEASURED ON THE BASIS OF THE CHASSIS GROUND.

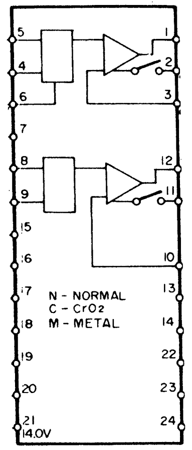
NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only
should be used to replace any part marked wi
Any other component substitution (other
type), may increase risk of fire or electrical

SCHEMATIC DIAGRAM

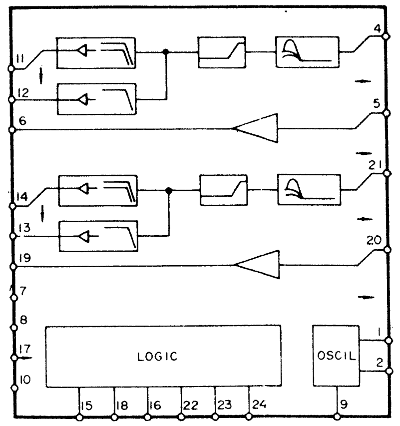


PIN NO.	NORMAL	CrO_2	METAL
22	15.0V	7.5V	0V
23	5.0V	0V	0V
24	5.0V	5.0V	0V

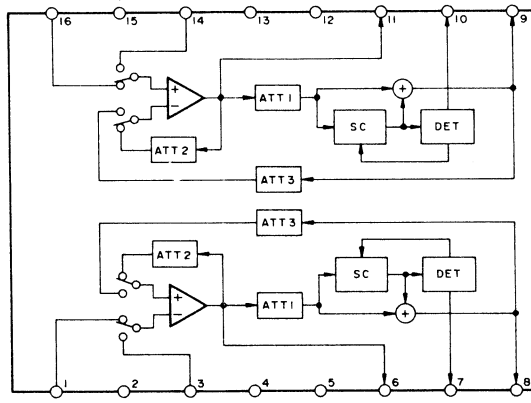
TDA1600



TDD1601



CXA1101P



, NS: NORMAL SPEED
. TAPE

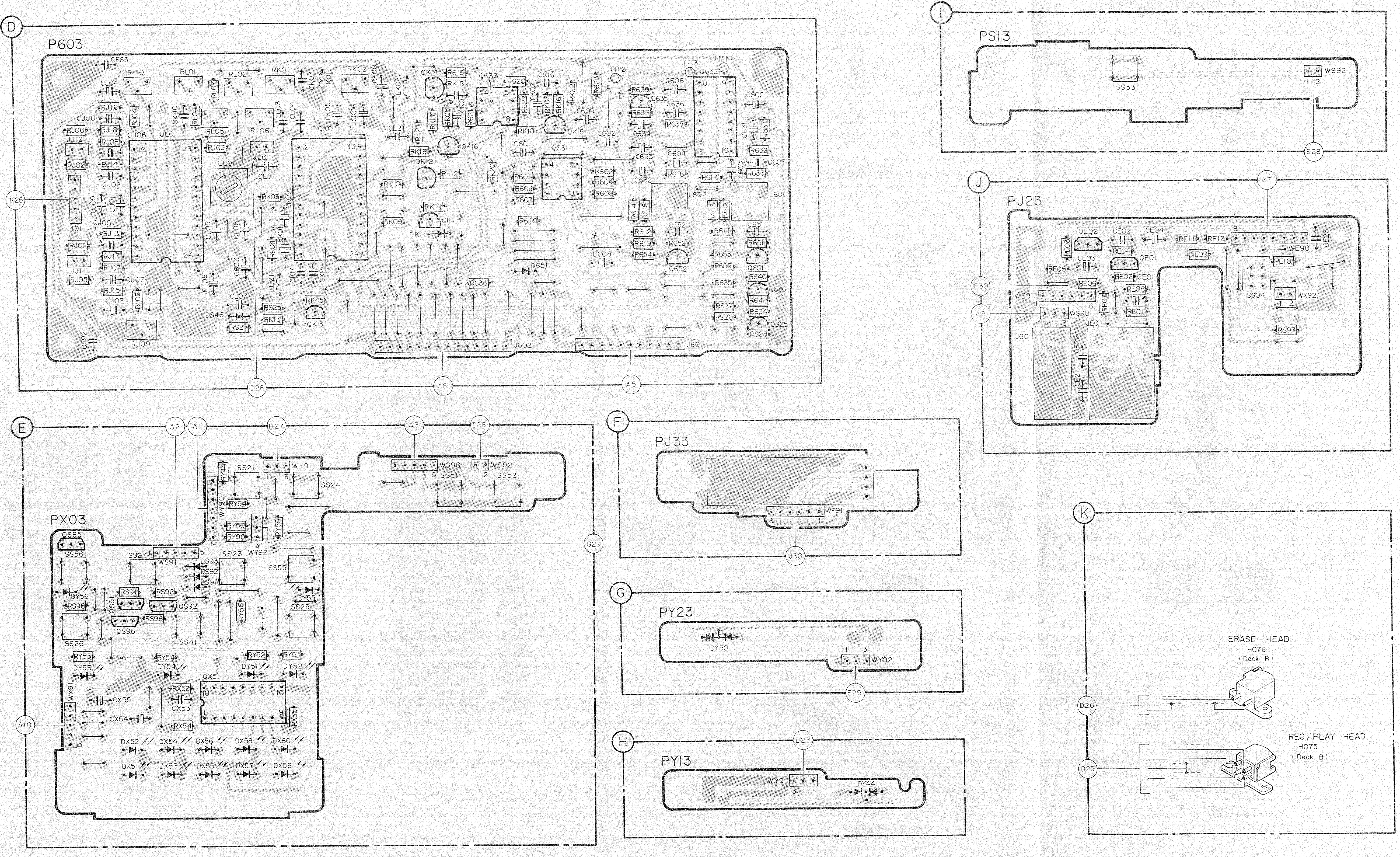
┴ ;CHASSIS GROUND LINE (0V)
▟ ; AUDIO GROUND LINE (+7.5V DC)

THE DC VOLTAGE OF EACH PORTION IS TO BE MEASURED ON THE BASIS OF THE CHASSIS GROUND.

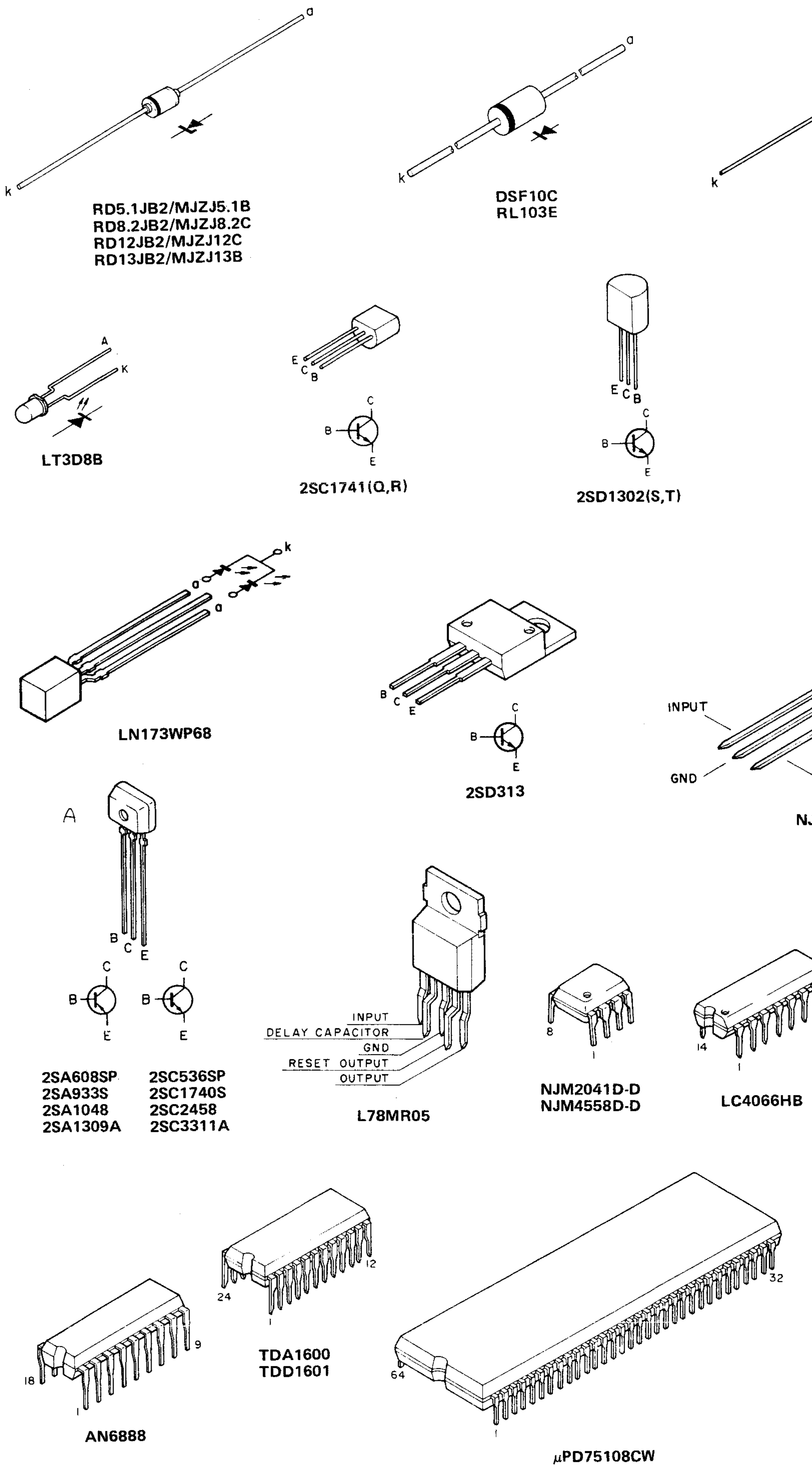
NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

WIRING DIAGRAM

R	RJ01~RJ11 RJ13~RJ18 RL01~RL06 RK01~RK04 RK09~RK12 RK21 RK17 R619 R620 RK18 RK06 RK16 R602 R637~R639 R652 R617 R631~R63 RE01~RE08 RE11 RE12 RE10
	RS95 RS21 RY44 RS25 RK13 RK45 RK19 RK05 RK15 RK20 R622 R609 RK22 R604 R614 R616 R618 R613 R615 R651 R640 R641 RE09 RS 97
	RY51~RY54 RS91 RS92 RS96 RY94 RY50 RY90 RY56 RY55 RK12 R621 R636 R601 R603 R607 R623 R608 R610 R612 R654 R61 R653 R655 R635 RS26~RS28
C	CF92 CF63 CK40 CL05~CL08 CL01 CL03 CL04 CK05~CK09 CL21 CK15 C601 CK02 C609 C602 C634 C606 C603 C605 CE03 CE02 CE04 CE23
	CJ01~CJ09 C637 CK17 CK18 CK01 CK16 C608 C635 C636 C607 CE22 CE01
	CX53~CX55 C632 C604 C652 C631 C651 CE21
Q – X	QS85 QS96 QS91 QS92 QL01 QX51 XK01 QK01 QK13 QK12 QK11 QK14 QK16 Q633 QK15 Q631 Q635 Q652 Q632 Q651 Q636 QS25 QE02 QE01
D – L	DY56 DY51~DY54 DX51~DX60 DS91~DS93 LL01 DS46 LL21 DY55 LK01 DK11 D651 L602 DY50 DY43 L601 DY49 DY44
S – V	SS56 SS26 SS27 SS41 SS23 SS21 SS24 SS55 SS25 SS24 SS51 SS52 SS53 SS04 SS05



Semiconductor Layout



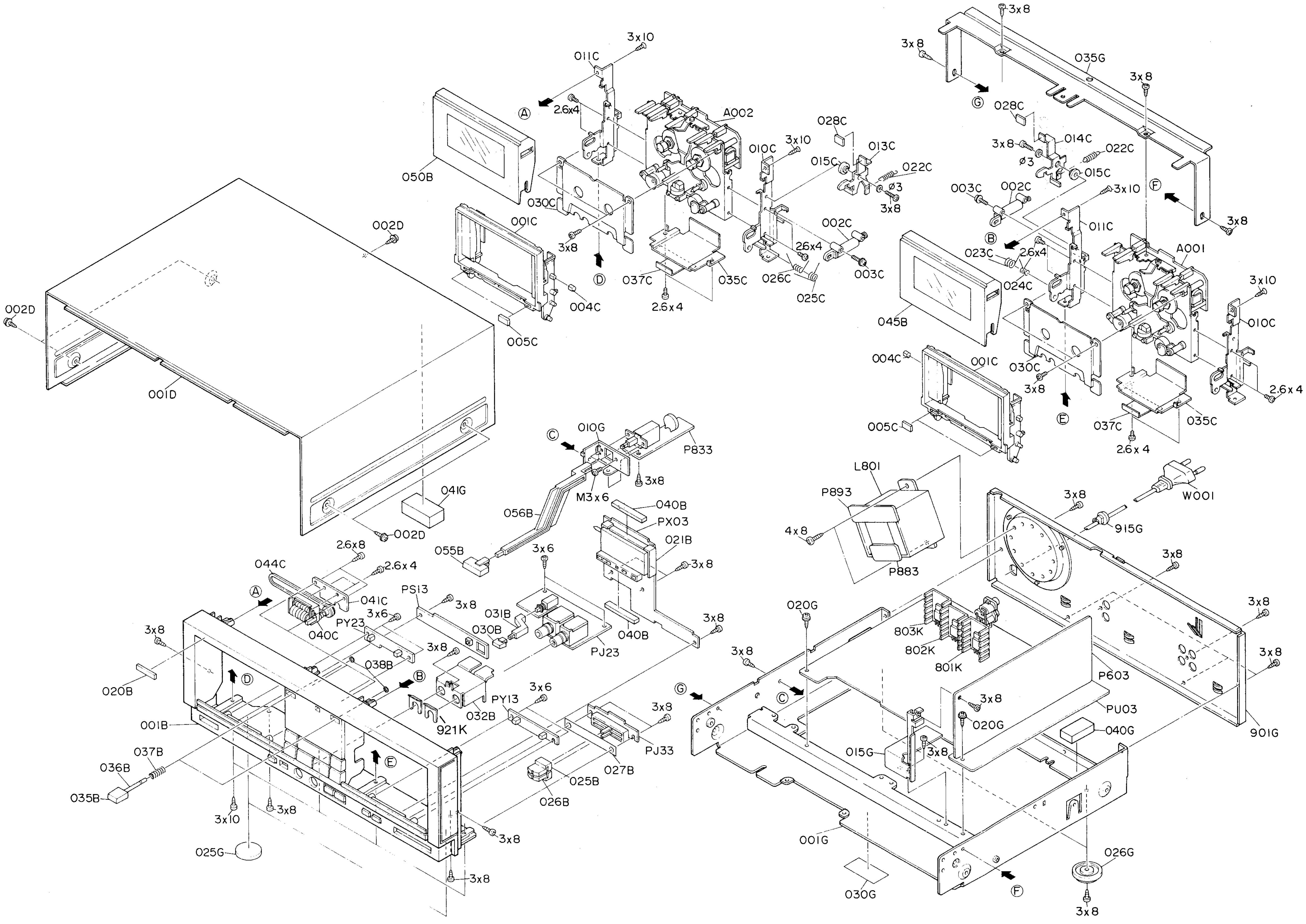
▲	Carbon film 0.125 W or 0.2 W	70°C	5%	△△*	Ceramic plate Tuning ≤ 120 pF NP.0 Others	2% −20/+80%	*a = 2.5 V b = 3.15 V or 4 V c = 6.3 V d = 10 V e = 16 V f = 25 V g = 40 V h = 63 V j = 100 V l = 125 V m = 150 V n = 160 V q = 200 V r = 250 V s = 300 V t = 350 V u = 400 V v = 500 V w = 630 V x = 1000 V A = 1.6 V B = 6 V C = 12 V D = 15 V E = 20 V F = 35 V G = 50 V H = 75 V I = 80 V
□	Carbon film 0.25 W or 0.33 W	70°C	5%	●●*	Polyester flat foil	10%	
■	Metal film 0.25 W or 0.33 W	70°C	5%	□*	Metalized polyester flat film	10%	
●	Carbon film 0.5 W	70°C	5%	○□*	Polyester flat foil small size (Mylar)	10%	
	Carbon film 0.67 W	70°C	5%	○△*	Polysterene film/foil	1%	
	Carbon film 1 W or 1.15 W	70°C	5%	■▲*	Tubular ceramic		
				○*	Miniature single		
Ⓒ	Chip component			○○*	Subminiature tantalum	± 20%	

NOTE:
Some withstand voltages of the condensers are shown in both numerical value and symbol on the circuit diagram. If withstand voltage shown in numerical value is different from that in symbol for a condenser, both are applicable.

List of mechanical parts

001B 4822 443 40558
021B 4822 255 40839
025B 4822 411 61455
026B 4822 411 61456
027B 4822 459 40613
030B 4822 410 26265
031B 4822 403 30717
035B 4822 410 26266
036B 4822 535 92441
037B 4822 492 42164
045B 4822 459 40614
050B 4822 459 40615
055B 4822 410 26157
056B 4822 403 30718
001C 4822 459 20391
002C 4822 464 50528
003C 4822 502 12557
004C 4822 492 63414
013C 4822 403 53328
014C 4822 403 53329
015C 4822 532 11636
022C 4822 492 32816
023C 4822 492 41643
024C 4822 492 41644
025C 4822 492 42165
026C 4822 492 42166
030C 4822 459 80426
040C 4822 349 50314
044C 4822 358 30519
025G 4822 462 41214
026G 4822 462 41186
915G 4822 532 51314
921K 4822 462 41037

EXPLODED VIEW



LIST OF ELECTRICAL PARTS

2SA608SP (2SA933S, 2SA1048, 2SA1309A)	4822 130 42715
2SC536SP (2SC1740S, 2SC2458, 2SC3311A)	4822 130 42483
2SC1741 Q or R	4822 130 43191
2SC2060 (Q, R)	4822 130 60173
2SD1302 (S, T)	4822 130 42125
2SD313E	4822 130 41768

RD5.1JB2 (MTZJ5.1B)	4822 130 80317
RD8.2JB2 (MTZJ8.2C)	4822 130 80273
RD12JB2 (MTZJ12C)	4822 130 80091
RD13JB2 (MTZJ13B)	4822 130 80623
RL103E (DSF10C)	4822 130 32508
ISS133 (ISS176, MA165)	4822 130 33305
LN173WP68 red/green	4822 130 80118
LT3D8B red	4822 130 80326

AN6888	4822 209 72547
CXA1101P	4822 209 72546
L78MR05	4822 209 70385
NJM2041D.D	4822 209 81565
NJM78M15A	4822 209 82829
TDA1600	4822 209 70378
TDD1601	4822 209 70379
µPD75108	4822 209 72548
4066 (LC4066HB)	4822 209 83067
4558D (NJM4558D.D)	4822 209 80401

CB01	Cap. elect.	0.22 µF	50 V	4822 124 21818
CE02	Cap.cer.	5 pF	50 V	4822 122 40103
CJ01	Cap. foil	680 pF	50 V	4822 121 42713
CJ02	Cap. foil	680 pF	50 V	4822 121 42713
CL03	Cap. foil	220 pF	100 V	4822 121 42344
CL04	Cap. foil	220 pF	100 V	4822 121 42344
CX53	Cap. elect.	2.2 µF	50 V	4822 124 22475
CX54	Cap. elect.	2.2 µF	50 V	4822 124 22475
CX55	Cap. elect.	2.2 µF	50 V	4822 124 22475
C806	Cap. elect.	4700 µF	25 V	4822 124 21855
C807	Cap. elect.	4700 µF	16 V	4822 124 22268
C809	Cap. elect.	0.22 µF	50 V	4822 124 21818
C811	Cap. elect.	0.047 µF	50 V	4822 122 40306
C851	Cap. cer.	0.01 µF	400 V	4822 122 40305

LK01	Choke coil	22 mH		4822 152 20564
LK02	Choke coil	22 mH		4822 152 20564
LL01	Osc. coil			4822 146 10184
LL21	Choke coil	2.2 mH		4822 152 20622
L071	Solenoid			4822 157 53318
L075	Solenoid			4822 157 53318
L601	Filter	19 kHz	MPX	4822 157 52461
L602	Filter	19 kHz	MPX	4822 157 52461
L801	Mains transformer			4822 146 30663

GU01	Res.network	10 K		4822 111 91185
GU02	Res.network	10 K		4822 111 91276
GU03	Res.network	10 K		4822 111 91185
GU04	Res.network	10 K		4822 111 91276
GU05	Res.network	10 K		4822 111 91185
GU06	Res.network	10 K		4822 111 91276
RJ09	Potm. trimmer	100 E		4822 100 11249
RJ10	Potm. trimmer	100 E		4822 100 11249
RJ47	Potm. trimmer	10 K		4822 100 11041
RJ48	Potm. trimmer	10 K		4822 100 11041
RK01	Potm. trimmer	47 K		4822 100 20541
RK02	Potm. trimmer	47 K		4822 100 20541
RL01	Potm. trimmer	100 K		4822 100 20672
RL02	Potm. trimmer	100 K		4822 100 20672
RL05	Potm. trimmer	10 K		4822 100 20537
RL06	Potm. trimmer	10 K		4822 100 20537
RQ33	Res. met. oxide	18 E	1 W	4822 116 60444
RQ43	Res. met. oxide	18 E	1 W	4822 116 60444
RU05	Res. wire wound	1 K	$^1/_2$ W	4822 111 50473
RV01	Potm. slide	50 K		4822 101 30559
RX13	Potm. trimmer	22 K		4822 100 20545
RX14	Potm. trimmer	22 K		4822 100 20545
R801	Res. met. oxide	1 E	$^1/_2$ W	4822 116 60306
R802	Res. V.D.R	1 E	$^1/_2$ W	4822 116 21086
R803	Res. V.D.R	1 E	$^1/_2$ W	4822 116 21086

SS04	Dolby	4822 276 12342
SS21	REC	4822 276 11559
SS23	PAUSE	4822 276 11559
SS24	REC. MUTE	4822 276 11559
SS25	FF	4822 276 11559
SS26	REW	4822 276 11559
SS27	STOP	4822 276 11559
SS41	FWD PLAY	4822 276 11559
SS51	DUBBING NS	4822 276 11559
SS52	DUBBING HS	4822 276 11559
SS53	CONTINUOUS PLAY	4822 276 11559
SS55	DECK A	4822 276 11559
SS56	DECK B	4822 276 11559
S851	MAINS	4822 276 11141

MISCELLANEOUS

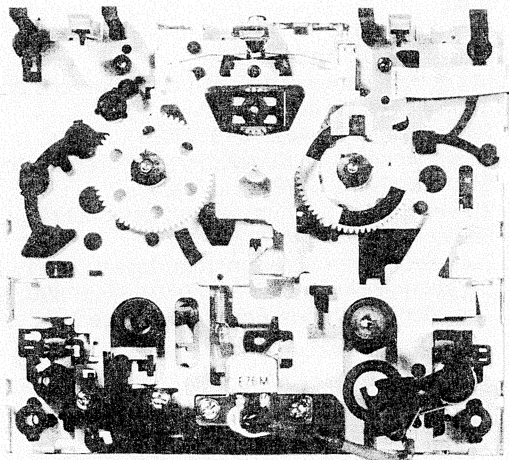
H071	PB-Head	4822 249 30122
H075	REC/PB-Head	4822 249 10353
HO76	ERASE-Head	4822 249 40194
JE01	Jack socket Mic	4822 264 30232
JG01	Jack socket Phone	4822 267 30617
JR01	Socket 2 p.	4822 266 30274
JW01	Socket 4 p.	4822 265 30397
XK01	Cer. Resonator	4822 242 71533
XU02	Resonator	4822 242 71774
Q071/Q075	Reel sensor	4822 130 80624
M071/M075	Motor	4822 361 21069

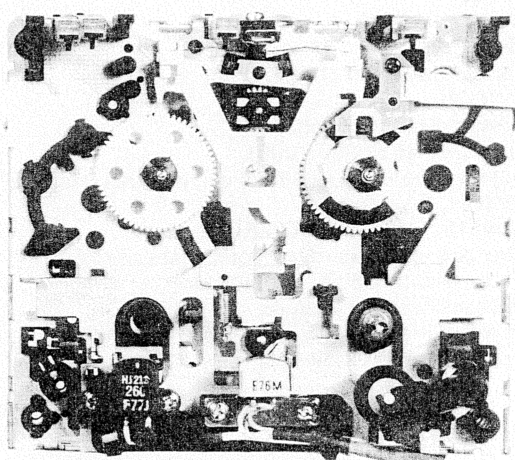
3560

Recorders tape deck CMAB6Z021A
CMAB6Z022A

Service
Service
Service

Service Manual





Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviçio

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

Subject to modification

GB NL 4822 725 21712 F D I

PHILIPS Published by Service Consumer Electronics

Printed in The Netherlands

© Copyright reserved

3560

(GB) MECHANICAL ADJUSTMENTS

This tape deck cannot be adjusted without mechanism control circuit.
For the adjustment method, please refer to the service manual for a unit employing this mechanism.

MAINTENANCE AND LUBRICATION INSTRUCTIONS

It is advised to clean the tape deck and lubricate the principal points after approx. 500 hours of operation.

1. To be cleaned with alcohol or spirit.
- heads
- capstan and pressure roller
- pulleys
- belts

Clean the heads, using a soft cloth or a wadded stick.

2. Lubrication instructions
- Shell Alvania 2 4822 389 10001
  To be used for ball bearings, gearwheels, shafts.
- Shell Clavis 15 4822 390 10048
  To be used for shafts and plain bearings.
- Silicon grease 5322 390 20011
  To be used for lubricating plastic parts.
- BP super visco static 20 W/50 4822 390 10069
  To be used for lubricating flywheel bearing.

(NL) MECHANISCHE INSTELLINGEN

Dit tapedeck kan niet worden ingesteld zonder een stuur-circuit voor het tapedeck.
Voor het instelvoorschrift wordt verwezen naar de service dokumentatie van het betreffende typenummer.

ONDERHOUD EN SMEERVOORSCHRIFT

Aanbevolen wordt het loopwerk na ca. 500 bedrijfsuren schoon te maken en op de belangrijkste punten te smeren.

1. Schoonmaken met alcohol of spiritus
- De koppen
- Toonas en drukrol
- Snaren
- Snaarwielen en poelies

Reinig de koppen met een zacht doekje of wattenstaafje.

2. Smeervoorschrift
- Shell Alvania 2 4822 389 10001
  Te gebruiken voor kogellagers, tandwielen, assen.
- Shell Clavis 15 4822 390 10048
  Te gebruiken voor assen en gewone lagers.
- Silikonenvet 5322 390 20011
  Te gebruiken voor het smeren van kunststofdelen.
- BP super viscostatische olie 20 W/50 4822 390 10069
  Te gebruiken voor het smeren van het vliegwiellager.

(F) REGLAGES D'ORDRE MECANIQUE

Cette console de cassette ne peut être reglée sans l'aide d'un circuit de commande de la mécanique.
La méthode de réglage figure dans la documentation service de unité portant le no de type de cet appareil.

MAINTENANCE ET INSTRUCTIONS DE LUBRIFICATION

Il est conseillé de nettoyer le mécansime après env. 500 heures de fonctionnement et d'en lubrifier les points les plus importants:

1. Nettoyer à l'alcool ou à alcool à brûler
- les têtes
- cabestan et galet presseur
- les courroies
- les roues de courroies
- les poulies

Nettoyer les têtes avec un chiffon doux ou des bâttonnets ouatés.

2. Instructions de lubrification
- Shell Alvania 2 4822 389 10001
  A appliquer à tous les coussinets cylindriques, les roues dentées, les axes.
- Shell Clavis 15 4822 390 10048
  A appliquer sur les axes et les coussinets normaux
- Graisse aux silicones 5322 390 20011
  A appliquer sur les éléments en synthétique.
- BP super visco static 20 W/50 4822 390 10069
  A appliquer sur le palier de volant.

(D) MECHANISCHE EINSTELLUNGEN

Dieses Deck lässt sich ohne eine Steuerschaltung für das Deck nicht einstellen.
Für die Einstellvorschrift wird auf die Service-Dokumentation der betreffenden Typennummer verwiesen.

WARTUNG UND SCHMIERVORSCHRIFT

Es empfiehlt sich, das laufwerk nach ca. 500 Betriebsstunden zu reinigen und an den wichtigsten Stellen zu schmieren.

1. Reinigen mit Alkohol oder Spiritus
- Köpfe
- Seile
- Seilrollen
- Tonwelle und Andruckrolle

Köpfe mit einem weichen Tuch oder Wattenstab reinigen.

2. Schmiervorschrift
- Shell Alvania 2 4822 389 10001
  Zu verwenden für Kugellager, Zahnräder und achsen.
- Shell Clavis 15 4822 390 10048
  Zu verwenden für Achsen und gewöhnliche Lager.
- Silikonfett 5322 390 20011
  Zum Schmieren von Kunststoffteilen zu verwenden.
- BP super Viskostatiköl 20 W/50 4822 390 10069
  Zum Schmieren des Schwungradlagers zu verwenden.

(I) REGOLAZIONI MECCANISCHE

Questo tape deck non può essere regolato senza il circuito di controllo del meccanismo
Per il metodo di regolazione, fare riferimento al manuale di servizio riferito agli apparecchi che utilizzano questo deck.

ISTRUZIONE PER LA MANUTENZIONE E LUBRIFICAZIONE

E'consigliabile pulire il tape deck e lubrificare i punti principali dopo circa 500 ore di funzionamento.

1. Pari che devono essere pulite con alcool o spirito

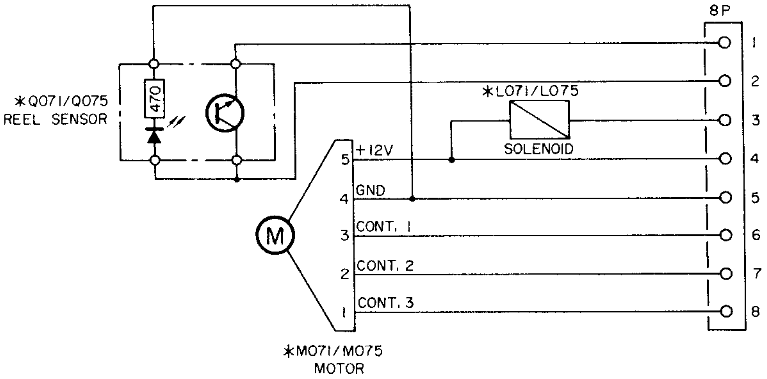
- Testine
- Capstan e rullo pressore
- Cinghia di trasmissione
- Pulegge

Pulire la testine utilizzando un panno morbido e utilizzando un cotton fioc.

2. Istruzioni per la lubrificazione

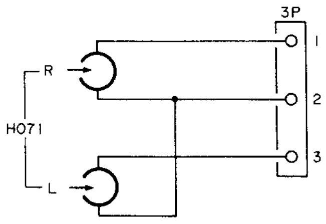
- Shell Alvania 2 4822 389 10001
  Da usare per cuscinetti a sfera, alberini, ruote dentate.
- Shell Clavis 15 4822 390 10048
  Da usare per alberini e cuscinetti lisci.
- Grasso silicone 5322 390 20011
  Da usare per lubrificare parti in plastica.
- BP super visco static 20 W/50 4822 390 10069
  Da usare per la lubrificazione del cuscinetto albero volano.

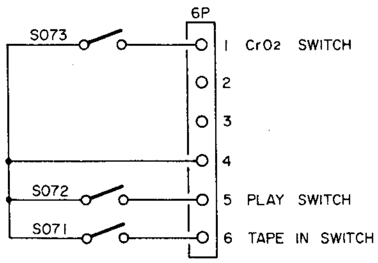
SCHEMATIC DIAGRAM



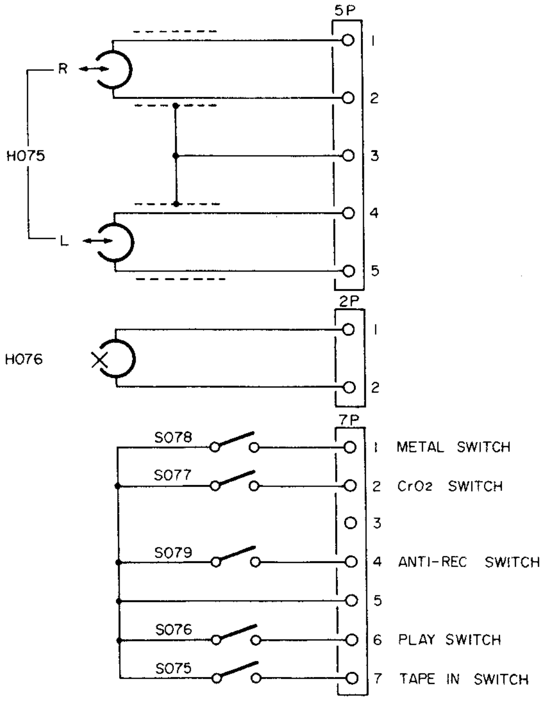
***: CMAB6Z021A/CMAB6Z022A**

CMAB6Z021A ONLY

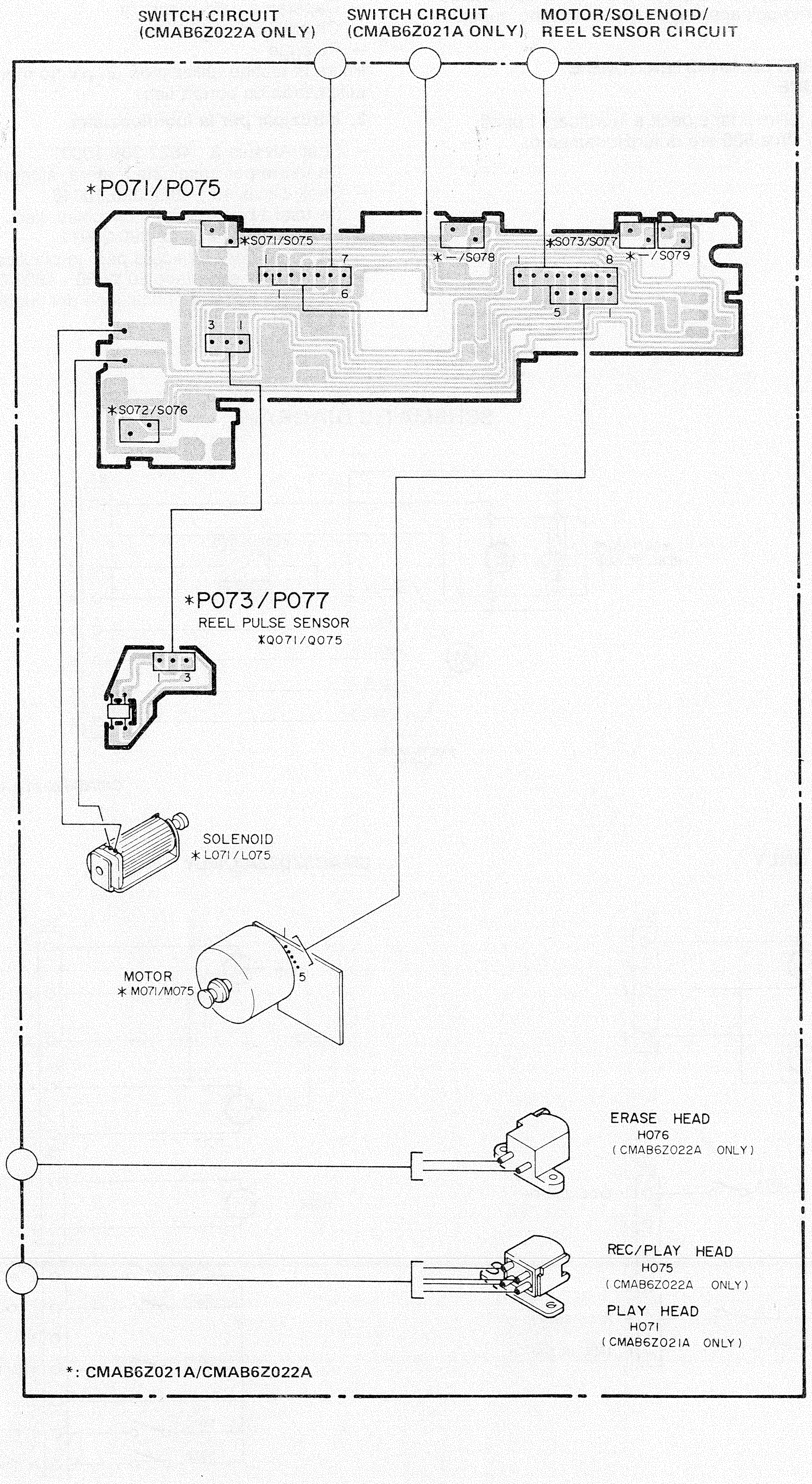




CMAB6Z022A ONLY

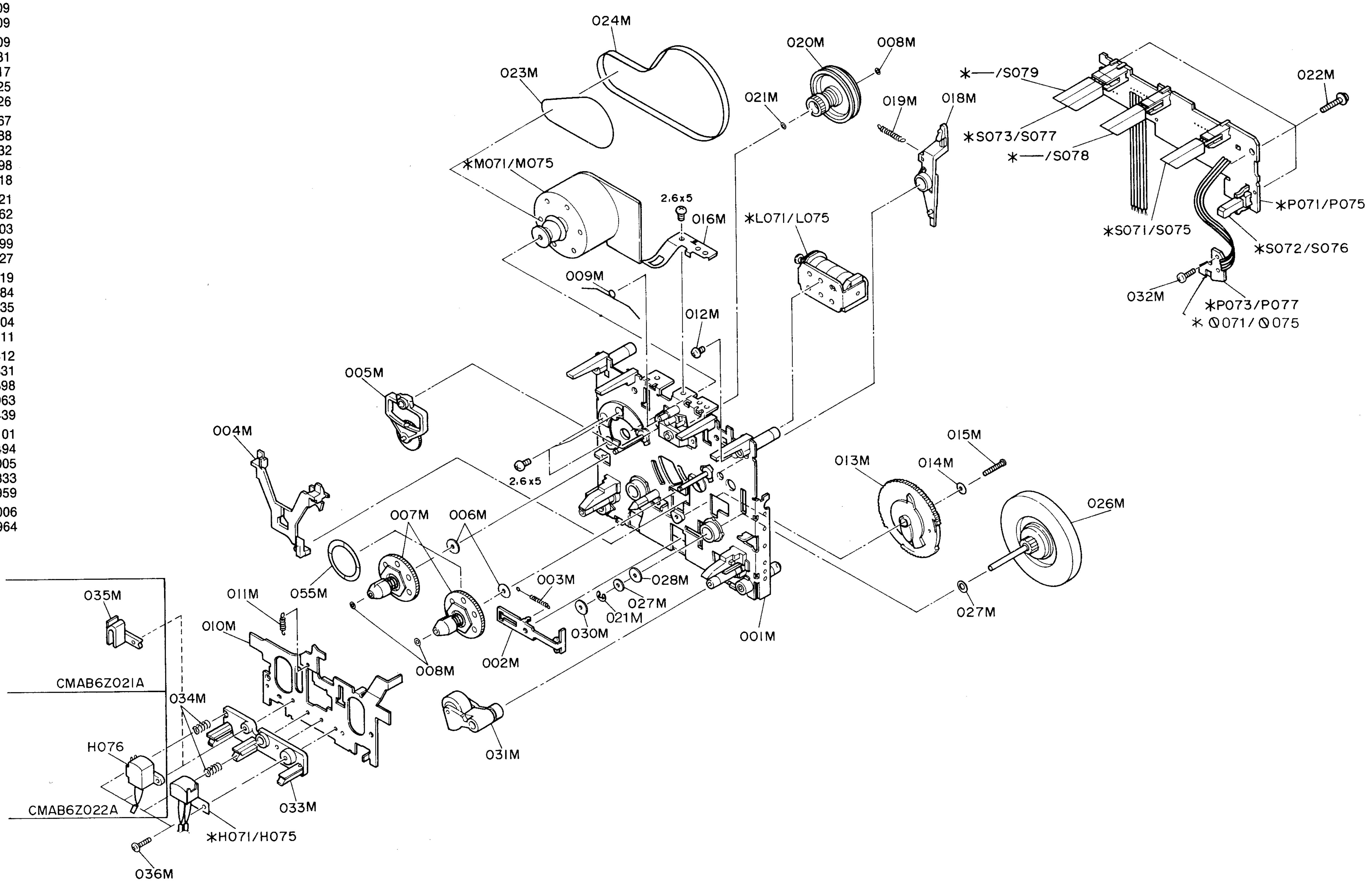


WIRING DIAGRAM



* H071	4822 249 30122
**H075	4822 249 10353
**H076	4822 249 40194
L071/L075	4822 157 53318
M071/M075	4822 361 21069
Q071/Q075	4822 130 80624
S071/S075	4822 271 30609
S072/S076	4822 276 12341
S073/S077	4822 271 30609
**S078	4822 271 30609
**S079	4822 271 30609
002M	4822 403 53331
003M	4822 492 32817
004M	4822 403 53325
005M	4822 403 53326
006M	4822 502 12167
007M	4822 528 10588
008M	4822 535 71232
009M	4822 492 63898
011M	4822 492 32818
013M	4822 522 32421
014M	4822 532 51962
015M	4822 502 13003
016M	4822 492 63899
018M	4822 403 53327
019M	4822 492 32819
020M	4822 528 40284
021M	4822 532 11635
022M	4822 502 13004
023M	4822 358 30811
024M	4822 358 30812
026M	4822 528 60331
027M	4822 532 11398
028M	4822 532 51963
029M	4822 530 70439
030M	4822 535 71101
031M	4822 403 40494
032M	4822 502 13005
033M	4822 403 53333
034M	4822 492 51959
036M	4822 502 13006
055M	4822 532 51964

* only for CMAB6Z021A
** only for CMAB6Z022A



*: CMAB6Z021A/CMAB6Z022A